

REMARKS

In view of the above amendments and following remarks, reconsideration of the rejections contained in the Office Action of September 5, 2007 is respectfully requested.

Formal Matters

A number of minor editorial changes have been made to the specification and abstract for the sake of form.

Please also note that Fig. 2 has been amended to add reference numbers 41 and 65 as such reference numbers are employed in the specification.

No new matter has been entered.

Claim Amendments

By the above, claims 1-3 have now been canceled and replaced with new claims 20, 21 and 23, respectively. In the Office Action, at the bottom of page 2, the Examiner alleged that claim 1 was incomplete for omitting essential structural cooperative relationships. However, new independent claim 20, corresponding to claim 1, clearly includes explicit structural interrelationship between the reflux unit and the distillation column.

It is noted that, for the sake of definiteness, it is not necessary for each and every structural cooperative relationship to be recited. It is sufficient if the relationship between the elements of a claim are recited either structurally or functionally. Such recitation is present in all of the claims now presented and under consideration for the Examiner.

New claims 22 and 24 have also been added to recite the structure of the separation membranes. Each of these claims recites that the silica gel membrane is carried on the surface of the porous ceramic substrate or in the pores of the porous ceramic substrate. While this is not explicitly stated in the specification, this is apparent from Fig. 5, and thus does not constitute new matter.

Claims 4-6 remain, being indicated as withdrawn. Claims 8-19 have been canceled. Claims 20-24 correspond to the elected invention.

New Independent Claims 20 and 23 Clearly Define Over the Prior Art

In rejecting claims 1-3, the Examiner cited U.S. Patent 5,611,842 to Friesen et al. (Friesen) in view of either JP 60-202705 (JP '705) or JP 1-155928 (JP '928). However, both new independent claims 20 and 23 clearly define over these references.

Independent claim 20 requires first and second branch pipes branching from the overhead vapor supply pipe. A superheater is recited as connected to the first branch pipe and a reflux unit is recited as connected to the second branch pipe. For example, please refer to Fig. 1, illustrating branch pipes 5 and 6 and superheater 7 and reflux unit 9.

New independent claim 23 includes the same limitations. While independent claim 23 includes a recitation of both first and second separators, as for example shown in the embodiment of Fig. 2, this embodiment also can employ the reflux unit 9 of embodiment 1, as noted at the bottom of page 27 of the original specification.

Accordingly, both of independent claims 20 and 23 reflect the fact that the separator and the reflux unit are provided in parallel to each other, i.e. on separate branch pipes branching from the overhead vapor supply pipe. Accordingly, it is possible to return a portion of the overhead vapor from the top of the distillation column to the distillation column through the reflux unit, thereby reducing the concentration of high-boiling components in the overhead vapor. This then makes it possible to reduce the concentration of high-boiling components in the overhead vapor to be separated by the separation membrane, which in turn makes it possible to reduce the concentration of high-boiling components after separation.

Looking at Fig. 13 of Friesen, which the Examiner references, there are clearly no first and second branch pipes having a separator on one branch pipe and a reflux unit on the other branch pipe. Thus, the advantages of the arrangement as claimed in claims 20 and 23 cannot be achieved by Friesen. In looking at the embodiments disclosed in the various drawing figures of both JP '705 and JP '928, it is further clear that no such arrangement is present in these references either.

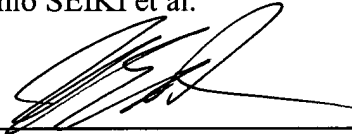
Accordingly, it is respectfully submitted to be clear that the present invention as reflected by both of independent claims 20 and 23 clearly patentably distinguishes over all of the

references that have been cited by the Examiner. Indication of this is respectfully requested. Further, indication of the allowability of all of the claims which are now pending and under consideration by the Examiner is further requested.

In view of the above amendments and remarks, it is submitted that the present application is now in condition for allowance, and the Examiner is requested to pass the case to issue. If the Examiner should have any comments or suggestions to help speed the prosecution of this application, the Examiner is requested to contact Applicants' undersigned representative.

Respectfully submitted,

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